Geophysical Research Abstracts,
Vol. 10, EGU2008-A-03258, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-03258
EGU General Assembly 2008

Estimating the frequency of hydrological extremes with uncertainty: Skalka catchment, Czech Republic

K. Beven (1) and S. Blazkova (2)

(1) Lancaster Environment Centre, Lancaster, UK (k.beven@lancaster.ac.uk), (2) T.G. Masaryk Water Research Institute, Prague, Czech Republic (sarka_blazkova@vuv.cz)

In the Skalka catchment (672 km2) in the Czech Republic, floods are produced by both rainfall and snowmelt events. A methodology for estimating the frequency of flood extremes is described based on continuous simulation. Model predictions from a large number of Monte Carlo simulations using different parameter realisations are compared against summary information of the flow duration curve, and the frequency characteristics of flood discharges and snow water equivalent. Model evaluation is carried out within the extended GLUE limits of acceptability approach. Since the parameters of the stochastic input model are part of the evaluation exercise in continuous simulation of this type, it is not possible to make an explicit assessment of input error. However, observational errors have been estimated in both discharges (using rating data) at 5 sites within the catchment, and snow water equivalent in 13 snow zones, 4 of which have observed data. The flood frequency curve and flow duration curve at the outlet of the whole catchment are not used in the evaluation but are used to test the predictions.